

OCT 16 2006


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PRE-APPEAL BRIEF REQUEST FOR REVIEW

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Duane N. Moore

Application Number

10/708,316

Filed

02/24/04

First Named Inventor

Zachary E. Berndlmaier

Art Unit

2138

Examiner

Siddiqui, Saqib Javaid

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed
with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 53,352

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____


Signature

Duane N. Moore

Typed or printed name

410-573-6501

Telephone number

October 13, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below.

☐ *Total of _____ forms are submitted.

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OCT 16 2006**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re patent application of:
Berndlmaier et al.

Serial No.: 10/708,316

Filed: February 24, 2004

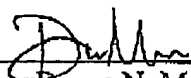
Group Art Unit: 2138

Examiner: Siddiqui, Saqib Javaid

Atty. Docket No.: BUR920030156US1

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571-273-8300) on 10/16/06


Duane N. Moore

For: **METHOD FOR SYSTEM PERFORMANCE TESTING AND SELF
CORRECTING ACTION**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTACHMENT TO PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

This pre-appeal brief request is being submitted together with a notice of appeal and is in response to the Office Action mailed July 14, 2006, setting a three-month statutory period for response. Therefore, this request is timely filed. Claims 1-4, 6, 8-11, 13, 15-18, 20, 22-25 and 27 stand rejected under 35 U.S.C. §102(e) as being anticipated by Childers, et al. (U.S. Patent No. 6,877,117), hereinafter referred to as Childers. Claims 5, 12, 19 and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Childers, in view of Bartlett et al. (U.S. Patent No. 3,761,882), hereinafter referred to as Bartlett. Claims 7, 14, 21 and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Childers in view of Porter et al. (U.S. Patent No. 5,263,032), hereinafter referred to as Porter. Claims 1, 8, 15, and 22 stand rejected under 35 U.S.C. §102(b) as being anticipated by Avizienis (U.S. Patent No. 3,517,171). Applicants respectfully traverse these rejections based on the following discussion.

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Applicants respectfully traverse these rejections because the rejections contain two clear errors. First, the references miss the claim element of a processor adapted to *permanently* adjust parameters of an integrated circuit (IC) device. Secondly, the references miss the claim element of a self-testing controller adapted to periodically perform performance self-testing of an IC device and a processor adapted to permanently adjust parameters of the IC device; and periodically performing performance testing of an IC device and adjusting parameters of the IC device.

A. Missing Claim Element – a processor adapted to *permanently* adjust parameters of an IC device

Neither of the applied references, neither individually nor in combination, teaches or suggests a processor adapted to *permanently* adjust parameters of an IC device until results from self-testing are within acceptable limits (independent claims 1 and 8). The Office Action argues that Childers mentions that a threshold is adjusted until an acceptable decision threshold and a usable range has been determined. Further, the Office Action asserts that “[o]nce the acceptable threshold is reached there is no more need to adjust the parameters and the circuit is left to operate at the acceptable parameters. Hence, the last modification is permanent” (Office Action, p. 2, para. 4 – p. 3, para. 1 (emphasis added)).

Applicants respectfully disagree with such a conclusion. The Office Action asserts that if there is no present need to adjust the parameters, then the previous modification to the parameters somehow becomes permanent; however, the Office Action fails to provide any logical support for such a conclusion. The Office Action does not cite any support within Childers to maintain its assertion that a modification becomes permanent merely because the parameters are currently acceptable.

Moreover, Applicants submit that the mere fact that an acceptable threshold is reached does not mean that the parameters will never become unacceptable in the future. If the parameters later become unsatisfactory, further modifications will be performed. Thus, the previous modification to the parameters (when the acceptable threshold was previously met) would not permanent. In other words, Applicants submit that just

because there may not be a *present* need to adjust the parameters does not mean that the parameters will never be modified again. Thus, it is unreasonable to interpret the parameter adjustments of Childers as being permanent. Such an interpretation of the term "permanent" would render Applicants' claim language meaningless.

B. Missing Claim Element – a self-testing controller adapted to periodically perform performance self-testing of an IC device and a processor adapted to permanently adjust parameters of the IC device; and periodically performing performance testing of an IC device and adjusting parameters of the IC device

Neither of the applied references, neither individually nor in combination, teaches or suggests a self-testing controller adapted to periodically perform performance self-testing of an IC device and a processor adapted to permanently adjust parameters of the IC device (independent claims 1 and 8). Further, none of the applied references teaches or suggests periodically performing performance testing of an IC device and adjusting parameters of the IC device (independent claims 15 and 22). The Office Action argues that a receiver transmits and receives a signal being tested by the method of Childers; therefore, the receiver itself is being tested. Specifically, the Office Action asserts that "once the signal is being tested, the circuit receiving and transmitting it is also being tested" (Office Action, p. 3, para. 2).

Applicants respectfully disagree with such a conclusion. Specifically, Applicants submit that Childers teaches checking the signal for errors; the circuit itself is not checked. Moreover, Childers teaches correcting the signal, the circuit is not corrected. As discussed in column 1, lines 30-41 of Childers, receivers are constructed with the goal of *achieving an acceptable BER* (bit error rate), which is the ratio of the number of *incorrectly received bits* to the total number of received bits. Typically, this is *achieved by adjusting and fixing the decision threshold of a comparator* within the receiver while providing a well-known optical test signal at the comparator data input. The decision threshold is a reference voltage against which the strength of a received signal is compared. If the received signal is above the decision threshold, it is interpreted as being

"on", but if the received signal is below the decision threshold, it is interpreted as being "off".

Conversely, the claimed invention checks for and corrects errors in the IC itself. More specifically, as described in paragraph 0005 of Applicants' disclosure, a method and apparatus for autonomously self-monitoring and self-adjusting the operation of an IC device is provided. Embodiments of the invention periodically perform performance self-testing on the IC device throughout the IC device's useful life. The invention also evaluates whether results from the self-testing are within acceptable limits and self-adjusts parameters of the IC device until the results from the self-testing are within the acceptable limits. Therefore, contrary to the position taken in the Office Action, Applicants submit that Childers does not disclose a self-monitoring and self-correcting IC device. Rather, it is the signal of Childers that is checked for errors, not the circuit itself; and, it is the signal that is corrected, not the circuit itself.

In addition, the Office Action argues that Avizienis discloses adjusting parameters of the IC device until the results from the testing are within acceptable limits (Office Action, p. 18, para. 1). In support for this contention, the Office Action cites column 2, lines 44-45 and the abstract of Avizienis, which discloses a computer system subdivided into several replaceable functional units, wherein each functional unit performs a major function of the system. The system further includes a Control and Diagnostic Unit (CDU) which monitors the units for faults and "*replaces* a faulty unit by switching off its power and switching on power to its *replacements*" (Avizienis abstract, emphasis added). Thus, the system is "subdivided into several *replaceable* functional units" (Avizienis, col. 2, lines 53-54, emphasis added). Accordingly, "[w]hen a fault is detected, the CDU *stops* the program and resumes it at a previous rollback point indicated on the computer program. The program contains numerous rollback points along it, at which the computations can readily be resumed. If the fault persists, the faulty unit is *replaced*" (Avizienis abstract, emphasis added). The Office Action also references item 152 of Figure 5, which illustrates a "POWER SWITCH" for switching off power to a faulty unit.

Therefore, Applicants submit that Avizienis does not teach adjusting parameters of the IC device as defined by independent claims 1, 8, 15, and 22. Instead, Avizienis merely discloses switching off power of a faulty unit and replacing the unit if the fault persists. To the contrary, as discussed in paragraph 0017 of Applicants' disclosure, the parameter processor 126 adjusts the parameters by, for example, altering the voltage supplied to portions of the IC device. Thus, for example, the parameter processor 126 can activate electronic fuses (efuses) 128 in a bank to permanently change the parameters of the voltage produced by voltage regulators 116 (e.g., by affecting the voltage reference module 118). This structure can also include permanent storage 130 (e.g., ROM internal or external to the microprocessor 114) adapted to maintain a history of adjustments made to the parameters by the processor. This storage 130 can be accessed (e.g., read or uploaded) later to gather statistics regarding common failures of specific designs.

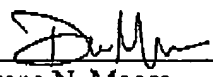
Furthermore, as discussed in paragraph 0020 of Applicants' disclosure, the 0020, the invention is not limited to merely adjusting the voltage, and embodiments of the invention can also adjust a number of different parameters such as the delay (by engaging or disengaging various latches, again through the use of fuses), processing speed (by adjusting the various multipliers), thermal cooling required (by adjusting the ICs fan speed), repair initiation (by engaging, for example, spare array redundant structures), etc.

In view of the foregoing, Applicants submit that the proposed combination of the cited references would not have resulted in the claimed invention. Specifically, the references, either individually or in combination, miss the claimed element of a processor adapted to *permanently* adjust parameters of an IC device until results from self-testing are within acceptable limits (independent claims 1 and 8). Additionally, the references miss the claimed element of a self-testing controller adapted to periodically perform performance self-testing of an IC device and a processor adapted to permanently adjust parameters of the IC device (independent claims 1 and 8) periodically performing performance testing of an IC device and adjusting parameters of the IC device (independent claims 15 and 22).

Please charge any deficiencies and credit any overpayments to Attorney's Deposit
Account Number 09-0456.

Respectfully submitted,

Dated: 10/16/06


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